

MISSOURI CONSERVATIONIST

VOLUME 82, ISSUE 4, APRIL 2021
SERVING NATURE & YOU



NATURE

is

healthy



Exposure to nature contributes to **physical well-being**, reducing blood pressure, heart rate, muscle tension, and the production of stress hormones.



Spending time in nature, conservation areas, woods, backyards, and urban parks may **ease stress levels**.



Getting away from busy schedules allows people to **connect with nature and themselves** in a way that brings calm and a sense of well-being.



Feeling tired? Spending just 20 minutes outside can give your **brain an energy boost** comparable to a cup of coffee.



Taking a nature walk may **increase attention spans** and creative problem-solving skills by as much as 50 percent.

Get healthy in nature this year. Visit mdc.mo.gov/places-go or download the free **MO Outdoors** app for ideas on where to go near you.



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Wild turkey



MISSOURI CONSERVATIONIST



ON THE COVER

A brown-headed nuthatch perched on a shortleaf pine tree

NOPPADOL PAOTHONG

600mm +1.4x teleconverter
f/5.6, 1/3200 sec, ISO 800

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Letters to the Editor

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FANTASTIC FEB

I really enjoyed the February issue of *Missouri Conservationist*. The articles on flying squirrels, black bears, and shed antlers were well written, informative, and entertaining.

Tom Quinn
Mehlville



FLYING INTO YOUR HEART

I enjoyed reading *Taking the Nightshift* in the February issue about flying squirrels [Page 10]. In September, we discovered a flying squirrel had taken up residence in one of our birdhouses and had four babies. The opening into the birdhouse was only slightly larger than a quarter!

Teresa Walleman Barnett

I really liked your article on flying squirrels in February's *Missouri Conservationist*. Several years ago, I went out on our second-story deck where I had bird feeders hanging. It was dusk, but light enough I could see. I heard a noise and saw an animal on one of the bird feeders. Then it left in a sort of flying jump, but it did not hit the ground. It sort of swooped up toward a tree. It had to be a flying squirrel. I knew nothing about them, including the fact that Missouri has a population of them.

Barbara Reish Kirbyville

Your February publication featuring flying squirrels was certainly a nostalgic odyssey to my childhood. I appreciated your feature for its comprehensive coverage, fun facts, and excellent photography providing much needed exposure for this little-known forest dweller.

Glenn Pesta LaBarque Creek

SEIZE THE DAY

Thank you for your informative, stimulating, and educational publication. There is something for everyone each month. I was particularly moved by the picture on the back of the February 2021 issue, not only for the charming picture of the ring-billed gull, but for the inspirational words captioned below it. So many opportunities every day to enjoy, appreciate, and manage nature if we just seize the day!

Cathy Zinkel Mexico

UP FRONT

I'm a 71-year-old retiree, and I've read the *Missouri Conservationist* for decades. I'm not an outdoor girl and don't pretend to be. But I appreciate nature and all the mystery and beauty we receive from it.

Your *Up Front* column is the very first article I read. I love it. I always find the words uplifting, almost spiritual in a way. You're a wonderful representative to our great state for conservation. And a great representative for women and girls of all ages.

Donna Sasser Springfield

I WANT MY CONSERVATIONIST

We have been looking at children's books with my 1-year-old granddaughter, Ravenna. But when she saw her first *Missouri Conservationist*, she was so drawn to it with its animal photos that she no longer desires to look at her children's books. She can't wait for the next one to arrive.

Brad Ziegler Union

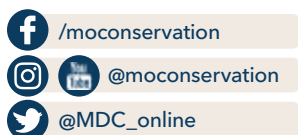
If she loves Missouri Conservationist, she'll love Xplor, our children's magazine, available free to Missouri residents at mdc.mo.gov/xplor. —THE EDITORS.

FROM MO TO FL

My father, Carey Weller, who lives in Cape Fair on Table Rock Lake, loves your magazine so much he also subscribes for both me and my brother who live out of state. My brother and I look forward to our monthly magazines. We also look forward to one day living on Table Rock Lake, so the education we learn from your magazine truly does help. Thank you for educating us so we have knowledge of the land, the wildlife, and its resources for the future of our family.

Jason Weller Naples, FL

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1

1 | Blue-winged
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2



3

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Up Front

with Sara Parker Pauley

✱ As I write the April *Up Front* column, we are wrapping up the 86th annual North American Wildlife and Natural Resources conference. The conference brings together professionals from all sectors to discuss and exchange ideas on conservation policy and efforts in North America. It has been a week mixed with discussions over current conservation challenges but also of celebrations of the collective work of partners to meet many of these challenges.

"The secret is to gang up on the problem, rather than each other," executive Thomas Stallkamp noted.

This month's issue highlights similar celebrations of the department's conservation work, accomplished with partners. We are able to celebrate our first successful elk season in modern history because of the collaboration with Kentucky, the Rocky Mountain Elk Foundation, and many other partners (see story on Page 22). And we welcome home the brown-headed nuthatch to Missouri's restored pine woodlands, thanks to collaborative efforts with Arkansas, the U.S. Forest Service, University of Missouri, and others (see story on Page 10).

We certainly would not have the conservation success we've enjoyed in Missouri without private landowners stewarding their land and providing habitat for our fish and wildlife. And this trend continues. It was heartening to learn that a recent online Grow Native! Native Landscaping webinar we hosted drew over 800 viewers — a record from our perspective!

Mother Teresa knew the importance of collaboration. "I can do things you cannot, you can do things I cannot; together we can do great things," she said.

Sara Parker Pauley

SARA PARKER PAULEY, DIRECTOR

SARA.PAULEY@MDC.MO.GOV

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Printed with soy ink



mdc.mo.gov 3

Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

ASSESSING SPECIES DISTRIBUTION

Spotted Skunks and Gray Foxes

✱ “Spotted skunks and gray foxes can be difficult to find,” said Hannah Warner, a graduate research assistant with the University of Missouri School of Natural Resources. She leads the field work for a study currently underway in Missouri’s Ozark region. “But,” she said, “with the right kind of bait, like sardines or a predator lure, you might get lucky and capture one on your trail camera.”

The study started in 2020, after the U.S. Fish and Wildlife Service (USFWS) received a petition to add the plains spotted skunk and the prairie gray fox to the endangered species list in 2012.

“This study will provide additional and more up-to-date information on the status of both species, which will help inform listing and management decisions,” Warner said.

Warner’s team is using game cameras to detect spotted skunks and gray foxes, as well as other



Unlike the common striped skunk, which is a poor climber, the much smaller state-endangered plains spotted skunk is an excellent climber.

Ozark-area study will help inform species status and new monitoring protocols

mesocarnivores, including raccoons, opossums, coyotes, and bobcats. Mesocarnivores mostly eat meat, but they also forage for fungi, fruits, and other plant material.

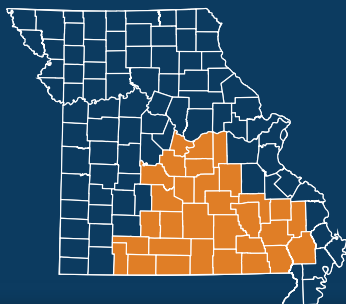
Warner’s team also evaluated the habitat surrounding each game camera. They measured area size and composition, canopy cover and species of trees, as well as available denning cover. “These measurements will help us better understand the species’ relationship to habitat at different spatial scales, which could help us identify distribution patterns,” Warner said.

In addition to providing current information for USFWS use, it will help MDC furbearer staff develop protocols to monitor species distribution and status, as well as habitat management effects on spotted skunks, gray foxes, and other mesocarnivores in the Missouri Ozarks.

Spotted Skunk and Gray Fox Study at a Glance

Purpose and Study Area

Assess spotted skunk, gray fox, and other mesocarnivore presence, distribution, and habitat relationships



MDC’s Research Partners

- University of Missouri
- U.S. Fish and Wildlife Service
- Kansas City Zoo

Methods

- Set up game cameras and baits/lures in study area in winter
- Monitor camera footage
- Assess habitat at different sites and scales
- Analyze presence and habitat data using occupancy models

Milestones to Date

- 400 study sites established
- Thousands of mesocarnivore and other species images captured

Management Applications

- Inform USFWS decisions related to the status of plains spotted skunk and prairie gray fox
- Help MDC monitor the status of both species
- Help furbearer staff develop monitoring protocols for species distribution, status, and habitat management

In Brief

News and updates from MDC



For more information on Missouri's many native wildlife species, visit the MDC online *Field Guide* at mdc.mo.gov/field-guide.

LEAVE WILDLIFE WILD

YOUNG WILDLIFE MAY APPEAR ABANDONED, BUT THAT'S USUALLY NOT THE CASE

➔ As you head outdoors during this long-awaited spring season, you may encounter a variety of newborn wildlife. MDC asks that you "leave wildlife wild" by not interfering with newborn or young animals as it can do more harm than good.

"Young animals are rarely orphaned," said MDC State Wildlife Veterinarian Sherri Russell. "If the young are left alone, the parent will usually return. Parents are normally out searching for food and cannot constantly attend to their offspring."

Russell added that baby birds are a common newborn people want to help. "If you see a chick on the ground hopping around and it has feathers, leave it alone and bring pets inside. It is a fledgling and the parents are nearby keeping an eye on it," she said. "Fledglings can spend up to 10 days hopping on the ground while learning to fly. If you find one that is featherless, you can return it to the nesting area if possible, as it probably fell out of the nest."

Dogs catching baby rabbits and lawn mowers running over nests are other common issues.

"Rabbits seldom survive in captivity and can actually die of fright from being handled," Russell said. "Even if the animal is injured, return it to the nest because the mother will most likely return."

Despite what many think, wild mothers do not abandon their young because of a human scent, and most newborn animals do not survive in captivity.

"While people have good intentions, the care and rehabilitation of wild animals requires special training, knowledge, facilities — and permits," she explained. "Without such care, wild animals will remain in poor health and could eventually die. And it is illegal to possess many wild animals without a valid state or federal permit."

Russell also noted that wildlife can become dangerous as they mature, and can also carry parasites, disease, and can damage property.

"Native wildlife can carry mites, ticks, lice, fleas, flukes, roundworms, tapeworms, rabies, distemper, tuberculosis, respiratory diseases, and skin diseases," Russell said. "Some of these can be transmitted to humans."

Although tempting to take them into homes, the best help people can offer wild animals is to leave them alone.



CELEBRATE MISSOURI TREES IN APRIL

April gives Missourians twice the opportunity to celebrate the value of Missouri trees and forests with days and events focusing on planting native trees and practicing proper tree care.

Missouri Arbor Day is Friday, April 2. Missouri has been observing the state's official Arbor Day on the first Friday in April since 1886, when the General Assembly declared that day be set aside for the appreciation and planting of trees. National Arbor Day is recognized on the last Friday of April, which is April 30 for 2021.

Get information on backyard tree care — including types of trees for urban and other landscapes, selecting the right tree for the right place, planting tips, watering and pruning information, and more — at mdc.mo.gov/tree-health.

MDC's George O. White State Forest Nursery near Licking offers a variety of low-cost native tree and shrub seedlings for reforestation, windbreaks, erosion control, and wildlife food and cover. Orders are accepted from Sept. 1 to April 15 every year. For more information, visit mdc.mo.gov/seedlings.

Communities across the state also hold local Arbor Day activities. For more information on Arbor Day and Missouri's Tree City USA communities, visit the Arbor Day Foundation at arborday.org.

🌲 Did you know? Missouri forests cover about one-third of the state and provide outdoor recreation, wildlife habitat, natural beauty, and watersheds for streams and rivers. Spending time in Missouri forests can provide a natural health benefit, too. Exposure to nature contributes to your physical well-being, reducing blood pressure and heart rate, relieving stress, and boosting energy levels. Get more information at mdc.mo.gov/forest.

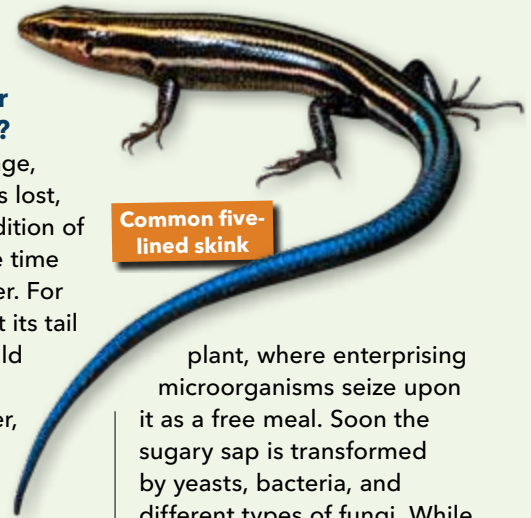
Ask MDC

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Send it to AskMDC@mdc.mo.gov
or call 573-522-4115, ext. 3848.

Q. How long does it take for a skink to regrow its tail after losing it as a defense?

➔ It varies by species, age, how much of the tail was lost, as well as the body condition of the individual lizard. The time of year would also matter. For example, if the skink lost its tail going into winter, it would not have the energy to grow a new tail. However, if the event happened earlier in the spring, the animal would have the whole summer to feed and that energy could go toward tail regrowth. The estimate ranges between two months to a year, depending on the previously mentioned factors.



Common five-lined skink

plant, where enterprising microorganisms seize upon it as a free meal. Soon the sugary sap is transformed by yeasts, bacteria, and different types of fungi. While orange is the most frequently reported, slime can also appear pink, yellow, or white.

A yeast called *Cryptococcus macerans*, commonly identified in this type of slime, produces carotene within its cells and gives the slime an orange color. Some observers call the phenomenon a "slime volcano," a term alluding to its oozing lava appearance.

Q. I saw this substance dripping liquid from a thick wild grape vine at Young Conservation Area. Can you identify it?

➔ The orange slime on this large grapevine is most often observed during cool, wet weather in the spring. While it may look dramatic, the slime itself isn't harmful to plants.

Trees, shrubs, and vines begin moving sap from the roots to the twigs as spring approaches. If the sap encounters a wound or cut, or if the trunk has been severed, it spills out of the



URBAN TREES: DAVID STONNER; SKINK: JIM RATHER; SLIME VOLCANO: JOANNE MOON; WHEEL BUG EGGS: KATY HUDLER; WHEEL BUG: NOPPADOL PAOTHONG



Q. I was collecting redbud flowers and saw this 1-inch-wide formation on the underside of the branch. What is it?

➔ This hexagonal cluster of eggs was laid by an insect in the assassin bug family called a wheel bug (*Arilus cristatus*), a moniker derived from the semicircular coglike projection on the insect's thorax.

These fierce predators use strawlike mouthparts to pierce the body of prey and ingest internal fluids. Since they prey on a variety of insects, including those considered

pests, wheel bugs are regarded as beneficial by many gardeners and farmers. But do not handle them; their bites are infamous for being exceptionally painful.

This egg cluster is glued together by a gummy cement that is believed to protect the eggs from severe weather, parasites, and predators. These egg clusters are typically found at a height of 4 feet or below on tree trunks and limbs, shrubs, and miscellaneous objects.

You can learn more about this species at short.mdc.mo.gov/ZR3.



Corporal Matt Smith

MORGAN COUNTY
CONSERVATION AGENT

offers this month's

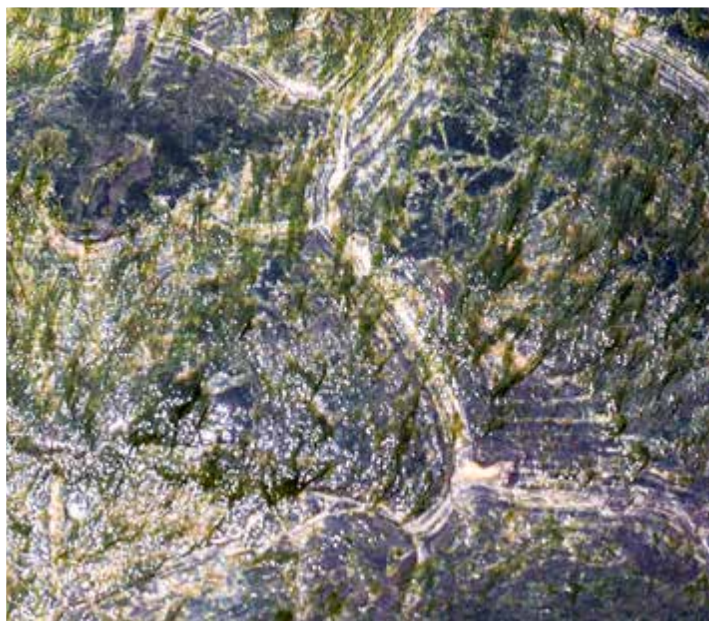
AGENT ADVICE

Turkeys gobbling in the morning is a sure sign of spring and spring turkey season. Youth season is April 10 and 11, and regular season follows April 19–May 9. Take precautions to make this season safe. Know the property lines where you're hunting and the location of other hunters on the area. Let someone know where you're hunting. Be sure of your target and what's beyond it. For more information, consult the *2021 Spring Turkey Hunting Regulations and Information* booklet at short.mdc.mo.gov/ZZf. While afield, look for another Missouri treasure — morel mushrooms. Always be sure of your identification before consuming a wild mushroom. For assistance, consult *A Guide to Missouri's Edible and Poisonous Mushrooms* at short.mdc.mo.gov/ZNf.

What IS it?

Can you
guess this
month's
natural
wonder?

*The answer is on
Page 9.*



INVASIVE SPECIES

MISSOURI'S LEAST WANTED

Invasive nonnative species destroy habitat and compete with native plants and animals.

Please do what you can to control invasive species when you landscape, farm, hunt, fish, camp, or explore nature.



Invasive bush honeysuckles are among the first plants to leaf out in early spring.

✕ BUSH HONEYSUCKLE

Native to eastern Asia, bush honeysuckle can grow from 6 to 20 feet tall. Leaves are green with a pale green, fuzzy underside. Twigs of all bush honeysuckles are thornless and hollow. In the spring, fragrant white or pink flowers appear, but become yellowish as the flower ages. The shrub's red berries, widely distributed by birds and small mammals, mature in pairs in September to October.

Why It's Bad

"Bush honeysuckles are fierce competitors," said Nate Muenks, natural resource management planner. "Their leaves appear early in the spring and remain late into fall, giving them an advantage over native plants. They can grow in almost every habitat type and form a thick understory that limits sunlight to native plants, inhibiting seedling establishment. They also compete for soil moisture, nutrients, and may produce a chemical that inhibits native plant growth. Bush honeysuckles compete with native plants for pollinators, potentially resulting in fewer seeds set on native species. Unlike native shrubs, the fruits of nonnative bush honeysuckles are carbohydrate-rich (sugar) and do not provide migrating birds with the high-fat content needed for long flights."

How to Control It

When the plant is small and the soil is moist, hand pulling is an option if the entire plant, including roots, can be removed. For larger plants, foliar spray, the cut-stump method, and basal bark treatments can be applied.

For more information, visit short.mdc.mo.gov/ZaE.

Alternative Native Plants

- ✓ Spicebush
- ✓ Arrowwood
- ✓ Ninebark
- ✓ Buttonbush



The invasive Callery pear's white flowers emerge in late March and early April.

✕ CALLERY PEAR

Also a fierce competitor, Callery pear (*Pyrus calleryana*) is an ornamental tree native to China. It is commonly called Bradford pear, but also is sold as Aristocrat, Cleveland Select, Autumn Blaze, Whitehouse and other names. It can quickly grow 30 to 50 feet tall and maintain an oval shape that unfortunately makes it attractive to some for use in manicured landscapes and parking lots.

Why It's Bad

Birds and other animals eat the fruits produced by Callery pears and distribute the seeds widely. Invasive pear trees can spread quickly, forming dense thickets that leaf out early, outcompeting native flowers and trees. Once escaped from cultivation, invasive pear trees can also develop long thorns making thickets impenetrable.

How to Control It

Seedlings can be removed by hand, but the entire root must be taken. Medium to larger trees are best controlled with basal bark and cut-stump treatments.

For more information, visit short.mdc.mo.gov/Zsq.

Alternative Native Plants

- ✓ American plum
- ✓ Eastern redbud
- ✓ Serviceberry
- ✓ Flowering dogwood
- ✓ Hawthorn

FIND SPRING OUTDOOR FUN WITH MO OUTDOORS APP

Spring has sprung, so now is a great time to get outside and discover nature. Looking for places to enjoy outdoor activities in Missouri, such as hiking, birdwatching, camping, shooting, fishing, and hiking? MDC has an app for that.



With our free mobile app — MO Outdoors — users can quickly and easily find MDC outdoor offerings based on the types of activities they want close to home, work, or even while traveling. MO Outdoors is available for download through Google Play for Android devices or the App Store for Apple devices. Learn more at mdc.mo.gov/mooutdoors.

MO Outdoors can help users find MDC conservation areas, fishing accesses, hiking trails, shooting ranges, nature centers, and more around the state based on their desired types of outdoor activities including birdwatching, camping, fishing, hiking, hunting, or shooting. Users can also mark "favorite" locations to quickly find them in future searches.

MO Outdoors also connects users to area regulations and season information, hours of operation, images, area closings, and interactive maps of area boundaries and features.

The map function also displays features such as parking lots, boat ramps, and wildlife viewing areas, and allows users to easily navigate to the features using their device's GPS. Users can also download maps for offline use.



Looking for an outdoor adventure this spring? Check out the MO Outdoors app. You may find yourself biking or hiking at Hart Creek Conservation Area.

WHAT IS IT? COMMON SNAPPING TURTLE

The common snapping turtle is a large aquatic turtle with a big pointed head, small lower shell, and a long thick tail. The upper part of the tail has large, pointy scales in a saw-toothed row. This large reptile can be found statewide anywhere there is a permanent source of water — farm ponds, marshes, swamps, rivers, and reservoirs. Often pursued for its meat, harvest is controlled by state regulation to maintain a healthy population. Refer to the *Wildlife Code of Missouri* for current regulations.





After years of planning, our small team of brown-headed nuthatch restoration partners and volunteers were set up and ready in Arkansas and Missouri last August. On the Arkansas side in the Ouachita National Forest, U.S. Forest Service staff helped us scout sites and set up nets. On the Missouri side in Mark Twain National Forest, our team with bird-banding supplies were ready for processing the birds.

The SQUEAK is Back

BROWN-HEADED
NUTHATCHES
RETURN TO
MISSOURI'S PINE
WOODLANDS

by Sarah Kendrick

photographs by
Noppadol Paothong



The brown-headed nuthatch is a pine-woodland species that once occurred in Missouri.



Nuthatches were trapped using mist nets set up in Arkansas pine woodlands for translocation to Missouri.

At sunrise on the first day of trapping, we opened the mist nets and started blasting the squeaky brown-headed nuthatch call over speakers. Soon, three birds were enthusiastically squeaking back and headed down from the canopy, getting closer to the net. We waited behind our vehicles for them to fly into the net, but these nuthatches weren't having it. I stood off to the side wringing my hands, willing the birds to fly into the net, and trying not to lose my mind.

The pressure was on. The time needed to get the birds from Arkansas to Missouri without being in captivity for too long left us with a small window of time for trapping. We decided to close the net and move on to another net set-up down the road, where project partners were already blasting the playback. Finally, two nuthatches flew into the net, dropping into the pocket. We radioed to the other mist-netting teams and discovered they also had caught birds. We met with the other teams to gather the captured nuthatches. They were perched quietly in individual transport tubes made of 4-inch ventilated cardboard mailing tubes and a piece of dowel in the bottom for a perch. We tossed in a few mealworms to tide the birds over during the trip, and started the haul to Missouri.

SQUEAKA SQUEAKA

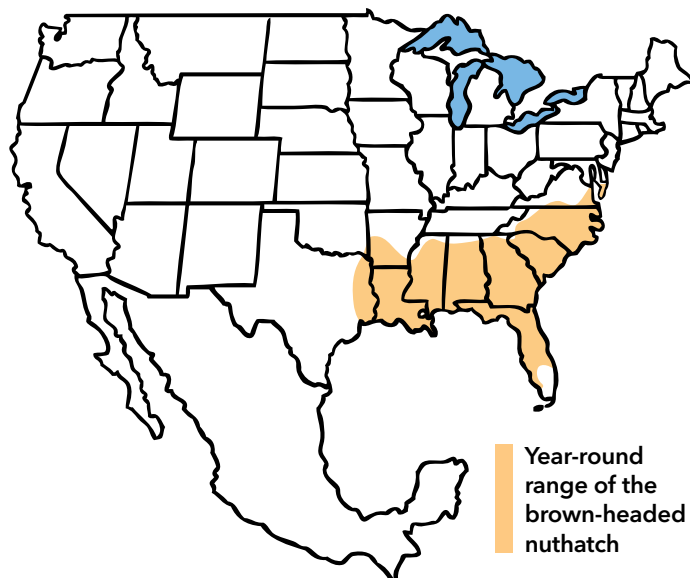
The brown-headed nuthatch is a small, stocky songbird of pine woodland and forest. These 10-gram creepers climb along pine boughs and over cones, picking insects and seeds from crevices like their more common cousin, the white-breasted nuthatch. Brown-headed nuthatches' stout and powerful wedge-shaped bills come in handy to excavate their own nesting cavities each year. But perhaps the most charming and surprising thing about these birds is their call, which sounds like a rubber ducky. No one believes me when I tell them this, but when I play their *squeaka squeaka* call, the response is always the same — an instant smile or chuckle followed by, "it really does sound like a rubber ducky!"



HABITAT LOST

Until recently, the brown-headed nuthatch was labeled extirpated in the state, meaning it was no longer believed to exist here. According to scant historical records, the brown-headed nuthatch was recorded in Missouri in 1878 and 1907. Around that time, logging operations in the late 1800s and early 1900s had nearly denuded Missouri's Ozark forests. Much of this forest was covered in the state's only native pine — the shortleaf pine. Over 6 million acres of our Ozarks is estimated to have been shortleaf pine and oak woodland prior to widespread logging. When Ozark forests regenerated after tree removal, many pine acres were largely replaced by faster-growing oak and hickory species, and the last large pineries of the state were lost.

The core brown-headed nuthatch range covers pineries of the southeastern states, reaching as far northeast as Maryland, sweeping south and west into northwestern Arkansas and down into portions of Texas. These birds require pines, whether shortleaf, loblolly, longleaf, or slash, and they are most abundant in woodland or open wooded areas managed with tree thinning and prescribed fire to maintain an open canopy and understory. Nuthatches need pines for both food and nest cavities — they forage in the cones of mature pines





Captured birds were placed in transport tubes and fed mealworms for their journey north.

and excavate nesting cavities in pine snags, or dead trees. So, regular woodland management is required to maintain their open habitat and provide dead pine snags for nesting.

RESTORING PINE WOODLAND

Jody Eberly was a wildlife biologist on the Mark Twain National Forest in the 1980s and 1990s. She and other district staff advocated for the first prescribed burns on remaining pine stands in the forest in the early 2000s.

“In those days, wildlife management took a backseat to timber management, and the only places wildlife habitat was considered was where it was not feasible to cut timber,” Eberly said. “Our district staff hatched a plan to combine timber harvest and prescribed fire on the same areas and try to improve vegetative diversity on larger swaths across the landscape. People thought we were crazy, but it worked. And each year, more acres were added to the plan, as the dream of hearing the squeak back in Missouri came closer to being a reality.”

By 2010, prescribed fire on the Mark Twain National Forest had more support. The forest was awarded grant funding through the U.S. Forest Service’s Collaborative Forest Landscape

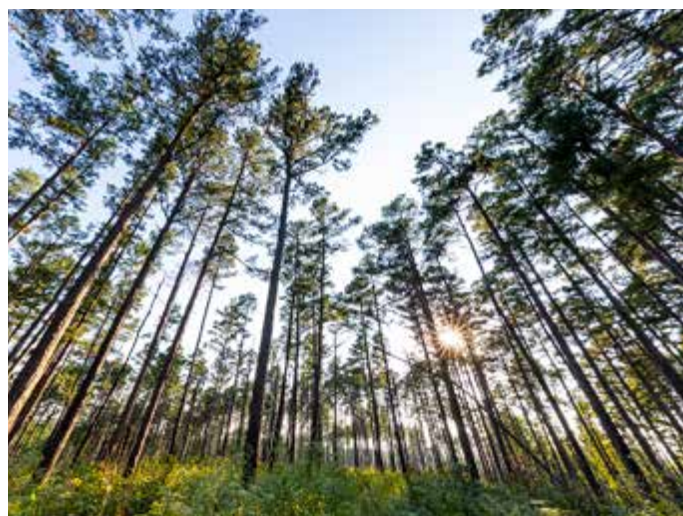
Restoration Project to ramp up woodland management (tree thinning and prescribed fire) on thousands of Missouri acres to restore pine and oak woodland. These intensive efforts over two decades have grown and maintained the acres of suitable pine woodland habitat that this nuthatch requires.

Bringing brown-headed nuthatches back to Missouri is not a new idea. Conservation partners have discussed restoration for a decade since this intensive management on the Mark Twain, hoping that someday the bird could be one more component of the restoration of this pine woodland ecosystem.

NECESSARY RESEARCH

Restoration team members Tom Bonnot, assistant research professor at the University of Missouri, and Frank Thompson, U.S. Forest Service research wildlife biologist, ran important analyses to make sure the project was feasible.

“Before we were able to bring back brown-headed nuthatches, we had to answer two questions,” Bonnot said. “Are Arkansas populations healthy enough to withstand removal of nuthatches for translocation to Missouri, and does Missouri have enough healthy, sustainable pine woodland habitat to support a nuthatch population?”



Woodlands and Wildlife

For birds and many other wildlife species, woodlands are diverse and critical. Sunlight reaching through the canopy to hit the woodland floor allows for a rich vegetative layer of grasses, forbs, and shrubs, which provide nesting habitat for a broader suite of bird species. The Missouri Bird Conservation Plan, compiled by Missouri’s bird-conservation partners, outlines the most-threatened landbird species in the state. Of the 29 threatened and declining birds in the plan, 15 require open wooded habitats like woodland for nesting. Managing woodlands with thinning and prescribed fire is both sustainable and necessary to prevent further declines of many of our favorite birds, including prairie warbler, yellow-breasted chat, red-headed woodpecker, and eastern whip-poor-will.



University of Missouri researcher Kristen Heath tracks radio-tagged nuthatches after release in the Mark Twain National Forest.

BRINGING THE SQUEAK BACK

After arriving at the release sites, we met up with restoration team member Kristen Heath, a University of Missouri researcher. As we exited the vehicle with the crates of birds in tubes and walked to the release site, several masked-up supporters met us along the way with cameras, documenting the occasion. Among those was Eberly, whose early habitat work was instrumental in the restoration.

“Being part of the release of brown-headed nuthatches in Missouri, and especially in my own backyard where we spent so much time and effort on management was more than thrilling and gratifying — it was a dream come true!” she said.

All released nuthatches were banded with a unique color-band combination and a silver federal bird band. Half of the birds were fitted with a radio transmitter weighing less than one-third of a gram, or about the weight of a paperclip. The batteries on these transmitters lasted about 30 days and allowed us to track nuthatches’ post-release survival. After banding the birds, our supporters gathered around in socially distanced fashion, Kristen and I each opened our hands, and both brown-headed nuthatches fluttered out and perched on nearby shortleaf pines, their *squeaka squeaka* calls part of Missouri’s shortleaf pine soundtrack once more.

According to 25 years of data from Arkansas bird surveys on U.S. Forest Service property, brown-headed nuthatches in the Ouachita National Forest have increased by 6.5 percent annually over the last 10 years. This gave researchers confidence that the birds were stable — even increasing — in nearby breeding populations.

“Brown-headed nuthatches are non-migratory birds who are relatively weak fliers and don’t disperse great distances, so their recolonization of restored pine woodland in Missouri nearly 200 miles from current breeding populations is highly unlikely,” Thompson said.

From this large dataset, Bonnot and Thompson were also able to identify common habitat characteristics measured at bird-survey points where nuthatches were recorded. These metrics were then applied to a model assessing Missouri’s habitat to determine how much was suitable for nuthatches. The analysis concluded that there was enough pine woodland habitat to support thousands of nuthatches.

With these questions answered and the necessary permits to translocate birds secured, planning began. Thompson, Bonnot, and I set to work during various COVID-19 lockdowns, gathering up field supplies, reaching out to others who had conducted brown-headed nuthatch restorations, building transport tubes to hold the birds, and even getting permission to cut a few shortleaf pines in central Missouri to build roost boxes to be placed around release sites. To pull off this restoration during a pandemic, we had to pinch pennies and depend on a small team so as not to bring together large crowds and risk spreading the virus.



Nuthatches were processed before release, and each bird was banded. Radio transmitters were also attached to half of the birds to track survival after release.



Bands



Tiny transmitter

A man with a beard and a cap, wearing a bright green long-sleeved shirt, is shown from the chest up. He is holding a small bird in his hands, and the bird is in mid-flight, its wings spread. The background is a dense forest of tall, thin trees, likely pines, under a clear sky.

U.S. Forest Service Research Biologist Frank Thompson releases a nuthatch into Missouri's pine woodlands.

Partnerships Bring Back Nuthatches

Since our first discussions about reintroducing brown-headed nuthatches, we were overwhelmed with excitement and enthusiasm within Missouri and beyond. These beautiful birds are fun to work with, but the willingness of partners to help us has been almost as enjoyable. Without the foresight and hard work of Mark Twain National Forest staff, the habitat wouldn't be available at the necessary scale for these special birds. With the U.S. Forest Service Northern Research Station and University of Missouri scientists, we were able to base the restoration on sound science. Jim Cox at Tall Timbers Research Station, a Florida nonprofit, shared his extensive knowledge of nuthatches, including capture and transport techniques. Tall Timbers staff even drove from Florida to help us trap birds. Ouachita National Forest staff scouted netting sites, drove us around on trap mornings, and offered to help however they could. Central Hardwoods Joint Venture has supported pine woodland restoration in the region for over 20 years. The brown-headed nuthatch restoration is a testament to long-term land management and strong conservation partnerships.

"Being part of the release of brown-headed nuthatches in Missouri, and especially in my own backyard where we spent so much time and effort on management was more than thrilling and gratifying — it was a dream come true!"

— Jody Eberly

SETTLING IN

Forty-six nuthatches were released in Missouri last fall. None of the trapped birds showed any apparent signs of stress during capture, transport, or release. Radio tracking and monthly surveys suggest Missouri's brown-headed nuthatches are doing just fine.

"The birds are actively eating, forming small social groups calling to one another and interacting, and exploring the available pine woodland habitat — some moving as far as 3 kilometers [2–3 miles] from the release site," Heath said.

The birds will continue to be monitored monthly until they begin nesting later this month. We will monitor nest survival and begin preparations for another batch of around 50 nuthatches to be captured and released in fall 2021. ▲

Sarah Kendrick is the state ornithologist in MDC's Science Branch. She has a master's degree in avian ecology, loves her job, and challenges everyone to learn how they can help the continent's rapidly declining bird populations by visiting 3BillionBirds.org.



This catalpa tree, located on Northwest's campus, is roughly a century old and one of the largest in the Missouri Arboretum.



Putting Down Roots

TREE CAMPUS HIGHER EDUCATION BENEFITS
COLLEGE LANDSCAPES AND STUDENTS

by Madi Nolte | photographs by David Stonner



In August, Northwest's freshman tree planting dedicated a heritage oak tree, a disease-resistant hybrid between the English oak and burr oak, to the incoming class of 2020. This annual event highlights one of many ways Northwest's students are able to engage in tree planting efforts.

In her first week as a college freshman, Northwest Missouri State University student Kaitlyn Richey found herself kneeling on freshly disturbed earth in the steamy August heat. Sweat dripped from her nose as she packed dirt around the base of what had just become the newest tree on campus — a dawn redwood.

Richey's mind then wandered to the future. This tree would grow to be strong and sturdy during her time at Northwest, just as she hoped she would. She promised herself she would come back to take a photo beside the tree each year until graduation. By participating in Northwest's annual freshman tree planting ceremony, Richey was already leaving marks on her campus that would last long after graduation.

This Northwest tradition of planting a tree in honor of each freshman class aligns with the campus' legacy as the Missouri Arboretum, as well as its recognition by Tree Campus Higher Education.

Tree Campus Higher Education

Tree Campus Higher Education is a program that recognizes colleges and universities nationwide for their commitment to establishing and sustaining healthy campus forests, as well as actively engaging staff and students in those efforts. The Arbor Day Foundation has overseen this program since its creation in 2008.

Through this program, college students nationwide get involved with hands-on learning projects through tree planting efforts on campus and within their communities. Tree Campus Higher Education recognizes nine Missouri colleges and universities, with the University of Missouri–St. Louis (UMSL) being the most recent to gain recognition.

Russell Hinnah, MDC community forestry supervisor, oversees Tree Campus Higher Education in Missouri. Hinnah reviews applicants to ensure they meet five core standards that serve as the backbone of Tree Campus Higher Education,

which they must then continue to meet. Perhaps the most significant of the five standards is the requirement to hold an annual Arbor Day observance and to involve students in service-learning opportunities on campus.

Recent UMSL graduate Madison Hallbrooks believes it is important for students to set a good example for younger generations and older generations alike. She saw this firsthand on her campus by participating in UMSL's Arbor Day celebration each fall and planting trees on campus with assistance from students, faculty, and staff of varying ages.

Recently retired, Missouri Arboretum Director Patrick Ward believes students are ready to listen, maybe even more so than adults.

"The younger generation is a little more attuned to how we are squandering our resources," Ward said. "They have to live in the environment that's being produced, and so, it's them that's got to save us from the problem."



Northwest student employee Laura Mott worked closely with the Missouri Arboretum in the fall of 2020, performing tree maintenance, participating in numerous tree plantings and research projects, and engaging fellow students.



Trees Heal

Trees help combat this problem Patrick Ward speaks of, acting as Mother Nature's lungs and providing the oxygen we breathe, while sequestering carbon dioxide. As these quiet giants work to combat pollution and add great beauty to Missouri's campuses, they also provide various psychological benefits, ones especially significant on college campuses.

Studies show that individuals spending time surrounded by trees can significantly improve overall mental health. Green environments create calming spaces and are known to lessen fatigue, depression, and anxiety, while also supporting relaxation and improving creativity.

Birds chirping, leaves rustling in the breeze, or a beloved campus squirrel scurrying across the sidewalk momentarily captures a student's attention before it shifts to something else. Involuntary attention like this provides the mind with a brief rest period and allows it to recharge — something much needed by many college students.

Test scores and retention rates have also been found to increase with views of nature from the classroom. Whether it is looking out a dorm room window, walking to and from class across campus, or studying in a hammock, healthy tree cover provides a serene, green backdrop to the bustling scene of a college campus. Teaching this generation of future leaders about the incredible benefits trees offer, while also actively engaging them in efforts to plant and care for trees, is key to safeguarding our natural spaces as well as public health.

Trees are essential to the health of an ecosystem and also have been proven to significantly improve overall mental health. They provide peaceful areas to study, relax, and briefly escape the hustle and bustle of a college campus.

Class and service projects, campus-led events, and the work of sustainability organizations allow students to leave their mark for years to come by participating in tree plantings. These service-learning opportunities fulfill one of the five standards required for Tree Campus Higher Education recognition.



Getting Involved

Little did Richey know during that freshman tree planting ceremony that she would be involved in numerous tree plantings during her time at Northwest. In November 2019 she joined Bearcats Going Green, a campus organization that started its own tree planting tradition on campus, helping to fulfill Tree Campus Higher Education's requirement of engaging students in service-learning projects. Bearcats Going Green began the tradition as a way to reward winners of its new annual homecoming recycling contest, as well as engage students campus-wide in recycling and sustainability efforts.

The men of Epsilon Lambda chapter of Delta Sigma Phi were recognized in the first annual tree planting. As the first annual winners, the fraternity joined Bearcats Going Green in planting a princess Cherokee dogwood — the first of its kind in the Missouri Arboretum — just outside Northwest's library.

Across the state, these service-learning projects take many different forms. For one past Drury University project, international students chose trees culturally important to their home country to plant and share information about. A large group of sorority and fraternity members at UMSL contributed to its first-ever service-learning project by planting more than 40 bare-root saplings across the campus.

Projects like these help students understand the impact trees have, something to be carried over their lifetime, as well as instilling a sense of pride for their contribution to both the environment and campus community.

While some surrounding cities have long been active within **Tree City Higher Education**, others have seen UMSL's participation in this program as the inspiration needed to become involved.



UMSL TREE PLANTINGS: PHOTOS BY AUGUST JENNEWEIN/COURTESY UMSL

Similar to consistent signage and architectural style, trees create unity in landscapes across college campuses we interact with just as frequently.



Prior to his retirement last year, Missouri Arboretum Director Patrick Ward brought more than four decades of tree knowledge to Northwest's campus. In his role, Ward oversaw the arboretum but more importantly served as an educator to students, faculty, and the community alike.

Funding Maintenance

Proper maintenance and care for an urban forest can require a great deal of resources. In 2019, 402 recognized campuses across the United States spent a combined total of more than \$55 million on tree planting, care, and management, including \$834,000 spent on Missouri's nine recognized Tree Campuses. MDC offers financial assistance for Tree Campuses within the state through the Tree Resource Improvement and Maintenance (TRIM) program. In Fiscal Year 2019, MDC awarded TRIM funds totaling \$54,426.

Gregory Ward, UMSL ground supervisor, relies heavily on MDC funding. In 2019, UMSL used this money to update its tree inventory and purchase a database to help guide the work needing to be done on the campus of about 2,400 trees. With the new database, Ward's crews were able to identify high-risk trees needing removal as well as pinpoint ideal sites for future trees.

"Without this grant, we wouldn't be able to do what we have to do to keep our campus safe and beautiful," he said.

Unity in Landscape

The landscape of a college campus holds a special job, bringing all aspects of the college together. This is perhaps one of the only entities of a campus that everyone interacts with. Not all members of a campus community attend football games, study in the library, or eat in the dining hall, but everyone is touched by the landscape.

Joe Fearn, head groundskeeper at Drury University, said this is something he thinks about all time. "I want students and others to feel comfortable, safe, enriched, revitalized, and relaxed by the landscape."

Through recognition by Tree Campus Higher Education, universities serve as anchors for neighboring communities. In the St. Louis area, for example, UMSL has begun to work closer with neighboring municipalities as they see the university's growing involvement with Tree Campus Higher Education. While some surrounding cities have long been active within Tree City Higher Education, others have seen UMSL's participation in this program as the inspiration

needed to become involved. By keeping a vested interest in the land they occupy and demonstrating proper urban forest management, Missouri's Tree Campuses serve as regional leaders, far beyond the confines of their individual campus.

It is abundantly clear that increasing the presence of trees in our lives can bring unmatched benefits to communities, natural environments, and public health, something that Tree Campus Higher Education is dedicated to ensuring continues on college campuses nationwide.

If interested in getting involved with Tree Campus Higher Education projects, or encouraging your college or university to apply for such recognition, reach out to the grounds, facilities, or arboretum supervisor on your campus. ▲

Madi Nolte is a former MDC intern and recent graduate from Northwest Missouri State University. She grew up in Osage County and now resides in Iowa where she enjoys hunting, fishing, and foraging for mushrooms and wild asparagus.



Talking and Stalking

INAUGURAL CLASS OF ELK HUNTERS SHARE LESSONS LEARNED

by Larry Archer | photographs by David Stonner



Just sending five elk hunters afield in the Missouri Ozarks in October and December was historic, but for each of them to harvest an elk may have been more than expected.

“In terms of our inaugural elk hunting season, we really couldn’t have asked for it to go any better,” said Cervid Biologist Aaron Hildreth.

Even after the archery portion of the season in October came and went without an elk being harvested, Hildreth said he was optimistic for the prospects during December’s firearms season.

“Although the firearms portion of elk season occurs well after the peak of the rut, it is not uncommon to hear bulls bugle that late in the year,” he said. “If the hunters were able to put in their time, I was confident that there were going to be some great opportunities to harvest bulls.”

On the opening day of the firearms season, Dec. 12, Joe Benthall, Mount Vernon, took the first elk of Missouri’s inaugural elk season — a 5x5 bull elk — on National Park Service property near Log Yard in Shannon County. Seven days later, one day before the end of the season, landowner Bill Clark took the fifth and final elk of the season — a spike bull elk — on his 80-acre property east of Peck Ranch Conservation Area (CA) near Van Buren in Carter County.

In addition to a place in Missouri’s conservation history books and elk meat

for the freezer, participants in the hunt also came back with lessons learned to pass along to future Missouri elk hunters.

Elk School 101: Online Learning

The field of elk hunting permit recipients — four drawn from the general population of Missouri applicants and one drawn from a smaller pool of qualifying property owners within the Landowner Elk Hunting Zone, which was made up of a portion of Carter, Reynolds, and Shannon counties — were closely divided between first-time and experienced elk hunters.

As a first-time elk hunter, Gene Guilkey, 60, of Liberty, quickly dove into the online elk hunting community to learn as much as he could.

“Never having elk hunted, I started from scratch,” Guilkey said. “Trying to get online and elk hunting videos — I don’t know how many different videos I watched — researching on the internet, the web, just, you know, elk, what they do, how they travel, things like that.”

While online, self-guided elk hunting school offers no formal graduation, Guilkey’s diploma took the form of a 6x7 bull elk taken Dec. 16 on public land in Shannon County.

Scouting the Area

The area authorized for elk hunting — parts of Carter, Reynolds, and Shannon counties — may seem small when compared to the statewide boundaries for more familiar deer and turkey seasons; however, the area’s hilly terrain and dense forests make it formidable to anyone unfamiliar with the lay of the land.

“I just recommend people who’ve taken interest in putting in for the draw — that want to increase their understanding of the area and how it lays and where the animals are — they need to take a few trips here during the year and not wait until the season,” said Clark, a 40-year Carter County resident who has been active in elk habitat improvement from the start of the restoration effort.

Hunter Sam Schultz, 43, Winfield, took just such an approach.

“I started going down six to seven weeks before the archery season,” Schultz said. “I started around the Peck Ranch area and just started expanding out around, just looking for sign for a starting point. It’s really just like it would be for deer hunting a new farm or something. I did the same thing down there.”

Capable of growing to more than 700 pounds, bull elk dwarf the more common white-tailed bucks, making the elk a prized harvest for many Missouri hunters. Until last year, Missouri hunters had to leave the state to hunt elk.





While capable of negotiating the heavily forested areas of the Ozarks, elk prefer open spaces for feeding.



The bull elk's call, or "bugle," serves two purposes: attracting cow elk and warning other males.

Talk and Tech

While the internet was helpful, nothing could take the place of person-to-person contact with the people who best know the area and the animals, Guilkey said.

"We talked to a lot of local people, including MDC staff, and I found some fields online," Guilkey said. "I talked to a county sheriff and said, 'Hey, you guys are out on the road a lot in these counties, where do you see them?'"

Clark suggested that in addition to visiting the area, take time to talk to residents.

"I'm just saying, travel here during the year to learn the terrain, the lay of the land, and go to the coffee shops," he said. "Talk to some of the loggers. All the loggers around here know where everything is."

Even with the guidance of those who work and live in the area, Guilkey said he also relied on high tech as well.

"I've never done any electronic scouting — my son had, but I had never — but I bought an app, and we did a lot of scouting electronically, where you could see the area, because that area is so dense and so hilly," he said. "You may be on the road on the side of the hill and there may be a field 100 yards away from you, but you can't see it."

Prepare to Adjust

Good scouting and planning increase odds of a successful hunt, but even with proper preparation, circumstances may require a mid-hunt adjustment to be successful. Elk that Schultz had scouted near Peck Ranch CA left the area by the time he returned for the hunt.

"Actually, on day one, I had to find a whole new spot to start."

And despite both being cervids (members of the deer family), white-tailed deer and elk require different approaches in some hunting situations and similar approaches in others.

"I think we realized that we were going to have to be mobile, and we were going to have to be able to adjust," Guilkey said. "So we just couldn't say, 'I'm going to hunt this one field until I see an elk.' We had to be constantly looking, searching the area to try to find them. We just realized we just weren't going to be able to set-up. We were going to have to move."

Even those who have hunted elk out west will have to adapt their approach when hunting Missouri elk, said Schultz.

"I think that my suggestion would be, if they hunted out west, forget all that," he said. "And I would hunt them, and I would search for them like you would deer. It doesn't mean hunt out of a tree stand. You don't hang up a tree stand, but look at patterns they're using as far as ridges, where the acorns are — because you know, they feed on those just like deer do — so I think if you can find good acorn crops early, you can find them."

The thickness of the Ozark forests also leads to a difference between Missouri elk hunting and hunting elk in western states. Without as many wide-open spaces, locating elk over long distances just isn't possible here.

"It was harder in the sense of finding them," he said. "You can't just get up on the side of a hill, at the top, and glass for a mile to see if they're on the other side, because you're basically in solid woods. So, you have to do a lot of searching for them. Definitely traveling through the hills, finding out what ridges they may be using or not using is helpful."



Listen to Your Wife

The techniques used by Missouri's inaugural class of elk hunters are universal for experienced hunters, but Schultz and Clark both drew upon a resource that some hunters don't have, and others refuse to use: they listened to their wives.

Both Schultz's wife, Lorelee, and Clark's wife, Dorothy, directly contributed to their harvests, the men said.

"We were hunting a certain area down there at Log Yard and we came back in the evening," Schultz said. "My wife, she was down there with us. She was at the cabin already, and we got to talking. She said that she had heard one bugle that night just before dark around the cabin where we were staying."

The following day, after hunting a different site, Schultz returned to the cabin before sunset and tried his luck at a food plot nearer the cabin. With his son, Jimmy, Schultz watched as several elk entered the food plot, including the bull elk he would eventually harvest.

"He finally gave me a good opportunity where I could put a shot on him," he said. "It was about 60 yards away."

(Main photo above) Considerable habitat improvement, including reclearing overgrown openings in the Ozarks' forest, was undertaken by MDC, governmental and not-for-profit organizations, and local landowners before the arrival of the elk in 2011. (Inset) Elk constantly challenge one another for the privilege of mating with the females in the herd. The dominate bulls maintain exclusive mating rights to multiple cow elk, a group referred to as a "harem."

For Clark, the season appeared as if it might slip away without getting his elk. Limited by the landowner permit to his own property, he had watched the herd well enough over the years to know it didn't venture through his land often in December. With every other permit already filled, Clark, 79, was resigned to the fact that it might not happen, and it might not have, had it not been for Dorothy.

"We were sitting at the breakfast table, and she walked over to the window and saw the cow elk down there. A herd of about 30 or 40 cows, more or less," he said. "I was just looking for horns because I knew that's what my permit was for, and there was one spike there — just one of them, one bull — and, so, I shot him."

Adventure of a Lifetime

Five hunters, five harvests. The list of those who have hunted and harvested elk in Missouri during modern times is short, but it will grow. While it remains an exclusive club, what these new Missouri elk hunters share with every other Missouri hunter — from squirrel and rabbit hunters, to quail and pheasant, to waterfowl, deer, and turkey — is the joy of being in nature and the thrill of the hunt.

"It was really enjoyable," said Guilkey. "I mean, I'm still on Cloud Nine. When people ask me to talk about the hunt, it was — just for me — the adventure of a lifetime." ▲

Larry Archer is the associate editor of Missouri Conservationist.



Gene Guilkey
DEC. 16, SHANNON COUNTY

JEFF GIRDNER



Bill Clark
DEC. 19, CARTER COUNTY

DOROTHY CLARK



Joe Benthall
DEC. 12, SHANNON COUNTY



Sam Schultz
DEC. 15, SHANNON COUNTY

COURTESY SAM SCHULTZ



Michael Buschjost
DEC. 15, CARTER COUNTY

COURTESY MICHAEL BUSCHJOST

Elk Hunt 2021 ... and Beyond

On the heels of the highly successful inaugural elk hunt in Missouri in 2020, MDC staff are preparing for the follow-up season. The Resident Antlered Elk Application, which enters participants into the random drawing for permits for the 2021 elk season, will open May 1 and run through May 31. The application fee remains \$10, and those selected will be able to purchase a permit for \$50. Updated information on the application process is available online at short.mdc.mo.gov/Zat.

The number of permits to be issued for the 2021 elk season will be determined based on herd size, health, and bull-cow ratio as determined by aerial surveys, fall cow-calf counts, survival rates, and reproduction data, said Cervid Biologist Aaron Hildreth. The Missouri Conservation Commission was expected to vote on the elk season date and permit quota recommendation at its March 26 meeting, which was held after the deadline for this issue of *Missouri Conservationist*.

Aside from possible changes in the number of permits issued, the 2021 season will also see a loosening of the

restrictions on where qualifying landowners with an elk permit can hunt and who qualifies for the landowner allocation of elk hunting permits, Hildreth said.

"Local landowners have been supportive of the reintroduction of elk to the area and many have worked hard to create habitat that benefits elk and many other wildlife species," he said.

The changes will also lift the restriction limiting landowner permittees to hunting their own property, allowing the permit holder to hunt anywhere within Carter, Reynolds, and Shannon counties, excluding the refuge portion of Peck Ranch CA, just like general permittees. In addition to expanding the area where landowner permit holders can hunt, the changes will also require landowner permittees to wait 10 years before applying again, as is the case for the remainder of the permit holders.

"Given that all elk permit holders will be able to hunt throughout the three counties, we wanted to make the 10-year sit-out period uniform across all permit holders," said Hildreth.

Get Outside

in APRIL

→ Ways to connect with nature



A Toad Abode

Another familiar member of that spring soundtrack is the **American toad**. Male toads start singing on warm April nights. Their high-pitched trills last about 15 to 20 seconds at a time. American toads will keep insects in balance in your yard and garden. To make them welcome, make them a house! Turn a chipped clay pot upside down in a shady, leafy area. Set a clay saucer on top to keep it dark and cool.

Hungry Hummingbirds

As hummingbirds make their return to Missouri, keep them fueled up. Mid-April is a good time to hang up hummingbird feeders. To make "nectar," boil one part white sugar with four parts water, then let it cool. No need to add red food dye.



Ruby-throated hummingbird



Hawthorn flowers



Flowering dogwood

State Flower and Tree

Do you know the state's official flower and tree? If not, April is a good time to go out and learn about them. Hawthorn trees bloom starting in April. The **hawthorn's flowers**, Missouri's official state flower, look like clusters of small apple blossoms. **Dogwood trees**, our official state tree, also start blooming in mid-April. Four large, showy bracts look like petals that surround a cluster of the actual flowers, which are small and yellowish.

VIRTUAL

Native Plants: Naturescaping Blueprint for Butterflies

Wednesday • April 7 • 6-7:30 p.m.

Virtual event • Register by April 6 at short.mdc.mo.gov/ZRo or by calling 417-629-3434.

The blueprint for an engaging naturescaped yard or a school's outdoor classroom is as basic as third grade ecology. However, the rewards and the aesthetics are for all who love nature. Conservation educator and Grow Native! advisor Jeff Cantrell will share some garden designs and recommended native forbs for butterfly gardens at schools, public parks, and homes.

Natural Events to See This Month

Here's what's going on in the natural world.



Thirteen-lined and Franklin's ground squirrels emerge from hibernation.



June beetles appear.



Look for luna moths around porch lights.

ST. LOUIS REGION

Basic Archery for Adults

Saturday • April 24 • 9 a.m.–noon.

East Central College • 1964 Prairie Dell Road, Union, MO 63084

Registration required by April 17 at short.mdc.mo.gov/ZRJ.

Call East Central College at 636-649-5803 to confirm registration and to pay required fee to cover ECC administrative costs.

Ages 11 and older

Are you an adult that has never shot a bow and arrow before and you're not sure how to get started? Or maybe you did when you were young, but never pursued the activity any further. Learn the basics of shooting a bow and arrow using some of the techniques and methods that have been adopted by the National Archery in the Schools Program (NASP). Learn archery shooting fundamentals while gaining knowledge about equipment options and choices. All equipment will be provided. Not recommended for adults with shoulder or back injuries.



SIMPLE OUTDOOR MOMENTS

HAMMOCKING

Spending time in nature, including time in a hammock, is full of health benefits. Hammocking can reduce stress, improve sleep (nap time!), and improve your focus. It's also a great activity for any age. The gear is simple and easy to set up, and you can hammock almost anywhere — even in your own backyard.

HERE'S A FEW TIPS FOR HANGING OUT:



Pick the right place.

Check to make sure hammocking is allowed, if in a park or public area. Set up at least 200 feet away from any water source, and be mindful of leave no trace principles.



Secure your hammock about a 30-degree angle between the strap and ground, having the bottom of the hammock about 18-inches off the ground.



Select healthy trees at least 6 inches in diameter, with no dead branches or wildlife to disturb, and use nylon/polyester tree-saver straps to hang your hammock.



Listen to nature sounds around you, or your favorite music playlist, to help you relax. Reading and sleeping are also great hammock activities.

Mushroom Mania

April is a good time to start hunting for a Missouri delicacy — the **morel mushroom**. Notoriously hard to spot against the forest floor, morels are found in a variety of habitats, including moist woodlands and in river bottoms. They are often associated with ash trees, dying elms, and apple trees. There are three varieties of morels that are edible in Missouri, including yellow, black, and half-free morels. To be safe, always be certain of your mushroom identification before consuming. For more information, consult the *Guide to Missouri's Edible and Poisonous Mushrooms* at short.mdc.mo.gov/ZNf.



Half-free morel



Yellow morel



Black morel



Copperheads leave winter dens.



Listen for the rattling calls of belted kingfishers.

Places to Go

CENTRAL REGION

Blind Pony Lake Conservation Area

Shaking off cabin fever with quality fishing

by Larry Archer

✳ With its 195-acre namesake waterbody and seven additional fishing ponds, Blind Pony Lake Conservation Area (CA) provides anglers with plenty of opportunities to shake off any remnants of a winter spent indoors.

Located on 2,246 acres in Saline County, Blind Pony Lake maintains a healthy population of Missouri's most familiar game fish, said Blind Pony Lake CA Manager Nathan Storts.

"It's a great place for people who have cabin fever and are ready to get outside," Storts said. "It has a lot of decent-sized crappie and catfish, and when the crappie come up on the banks, you can catch them just about anywhere all the way around it."

As the water source for the Blind Pony Lake Hatchery, which supplies the warm-water fish used to stock many of Missouri's public lakes, care is taken to protect the lake's water quality. Private boats are banned, but MDC provides 12 jon boats that are free to use on a first-come, first-served basis.

"We don't want zebra mussels or any other invasives to come in hitchhiking on somebody's boat," Storts said. "Anything that goes into the lake is going to come into the hatchery, and it could potentially cause a lot of damage to what we're doing."



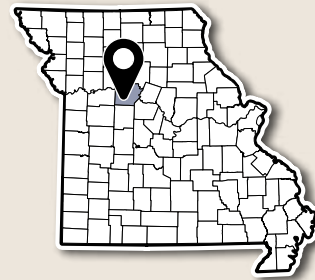
"We manage the place — the wildlife area — for quail, so we're trying to do a lot of early successional habitat work. We do a lot of burning and maintenance of areas to keep it to grassland."

—Blind Pony Lake CA Manager
Nathan Storts

NORRADOI PAOTONG



Anglers are not the only ones that take advantage of the fishing at Blind Pony Lake. A bald eagle surveys the area for a meal.



BLIND PONY LAKE CONSERVATION AREA

consists of 2,246.5 acres in Saline County. From Sweet Springs on I-70, take Highway 127 north 1 mile, then Route ZZ east 5.7 miles to the area.

39.0402, -93.3709

short.mdc.mo.gov/Zbd 660-335-4531

WHAT TO DO WHEN YOU VISIT



Birdwatching Included in the Great Missouri Birding Trail (short.mdc.mo.gov/ZbP). The eBird list of birds recorded at Blind Pony Lake CA is available at short.mdc.mo.gov/ZbW.



Fishing Black bass, catfish, crappie, sunfish.



Hiking Allowed on 3.5 miles of gravel service roads and 0.7 miles of paved roadway.



Hunting Deer and turkey

Deer and turkey regulations are subject to annual changes, so refer to the Spring Turkey and Fall Deer and Turkey booklets for current regulations.

Also **quail, rabbit, and squirrel**



Waterfowl Hunting Waterfowl regulations are subject to annual change, so check the *Migratory Bird and Waterfowl Hunting Digest 2020-2021* for current regulations.

DISCOVER MO OUTDOORS

Users can quickly and easily find outdoor activities close to home, work, or even while traveling with our free mobile app, MO Outdoors. Available in Android or iPhone platforms at mdc.mo.gov/mooutdoors.



WHAT TO LOOK FOR WHEN YOU VISIT



North American river otter



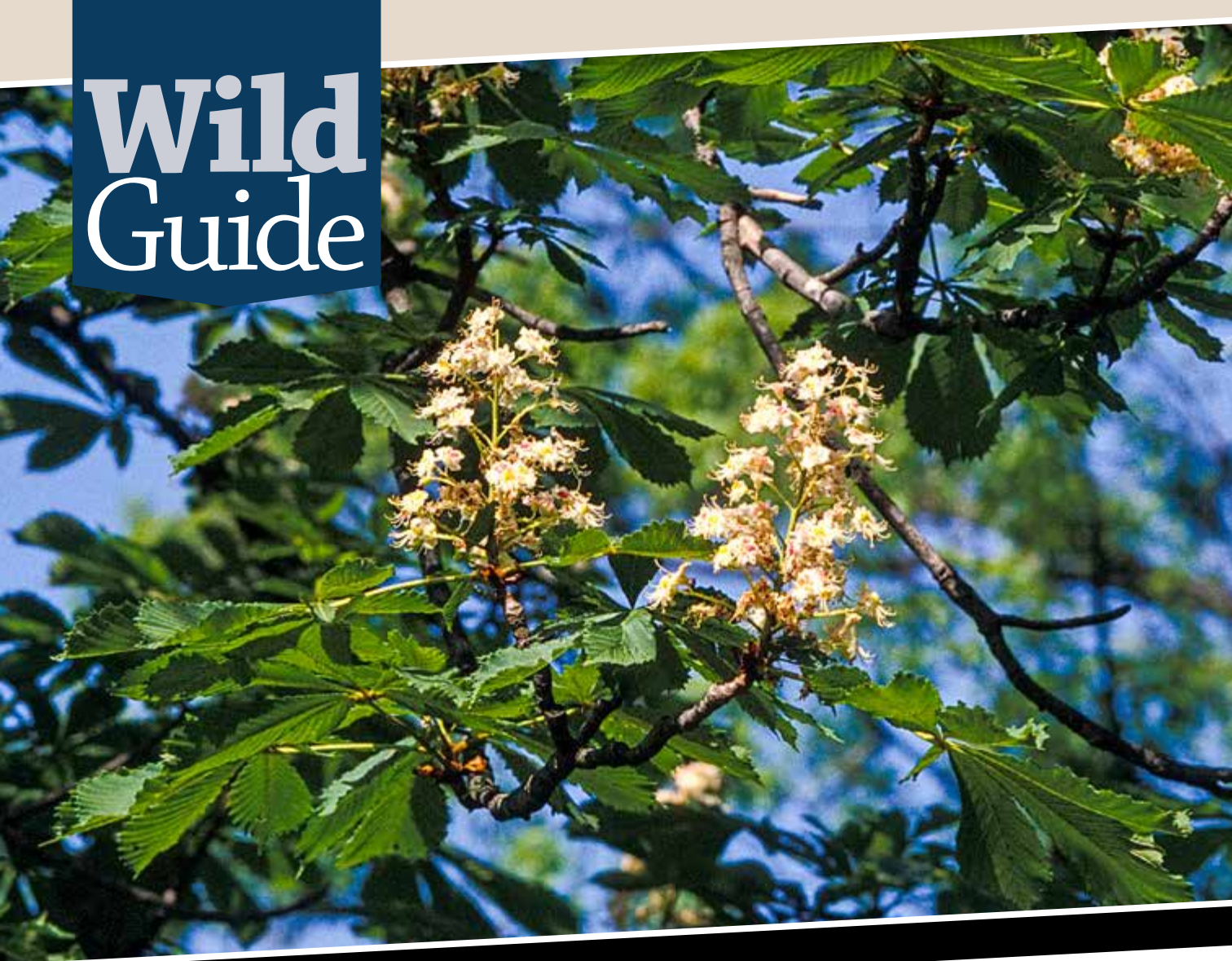
Horned grebe



Southern leopard frog



Cooper's hawk



Ohio Buckeye *Aesculus glabra*

Status	Size	Distribution
Common	Up to 50 feet	Statewide, except extreme southeast



Did You Know?

People have carried buckeyes in their pockets to prevent rheumatism and bring luck. This is the state tree of Ohio, and Ohioans have been called "buckeyes" since the late 1700s, when Ohio was part of the American frontier.

Ohio buckeye, a popular ornamental, can be a shrub or a medium-sized tree, depending on site conditions, with branches drooping and upcurved ends. It occurs in rich or rocky woods of valleys, ravines, gentle or steep slopes, bases of bluffs, edges of low woods, thickets, and occasionally on edges of limestone glades. Young trees have dark brown, smooth bark while their older counterparts have grayer bark broken into plates, roughened by small, numerous scales. The wood has been used for fuel, paper, artificial limbs, splints, wooden ware, boxes, furniture, veneer, and sometimes for lumber. The buckeye fruits in September to October.



ECOSYSTEM CONNECTIONS

Hummingbirds feed on the nectar of the greenish yellow, tubular flowers, which appear between April and May. Not many mammals eat the foliage, as it is unpalatable due to high levels of tannic acid.

Outdoor Calendar

❖ MISSOURI DEPARTMENT OF CONSERVATION ❖

FISHING

Black Bass

Impounded waters and non-Ozark streams:
Open all year

Most streams south of the Missouri River:

- ▶ Catch-and-Release:
March 1–May 21, 2021
- ▶ Catch-and-Keep:
May 22, 2021–Feb. 28, 2022

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2021

Nongame Fish Giggling

Impounded Waters, sunrise to sunset:
Feb. 16–Sept. 14, 2021

Paddlefish

Statewide:

March 15–April 30, 2021

On the Mississippi River:

March 15–May 15, 2021
Sept. 15–Dec. 15, 2021

Trout Parks

Catch-and-Keep:

March 1–Oct. 31, 2021

Spring Turkey Season

Spring turkey hunting youth weekend is April 10 and 11, with the regular spring season running April 19 through May 9. Find detailed information in the *2021 Spring Turkey Hunting Regulations and Information* booklet, available where permits are sold and online at short.mdc.mo.gov/ZZf.



Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.

HUNTING

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2021

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Deer

Archery:

Sept. 15–Nov. 12, 2021

Nov. 24, 2021–Jan. 15, 2022

Firearms:

- ▶ Early Youth Portion (ages 6–15):
Oct. 30–31, 2021
- ▶ November Portion:
Nov. 13–23, 2021
- ▶ Late Youth Portion (ages 6–15):
Nov. 26–28, 2021
- ▶ Antlerless Portion (open areas only):
Dec. 4–12, 2021
- ▶ Alternative Methods Portion:
Dec. 25, 2021–Jan. 4, 2022

Groundhog (woodchuck)

May 10–Dec. 15, 2021

Pheasant

Youth (ages 6–15):

Oct. 30–31, 2021

Regular:

Nov. 1, 2021–Jan. 15, 2022

Quail

Youth (ages 6–15):

Oct. 30–31, 2021

Regular:

Nov. 1, 2021–Jan. 15, 2022

Rabbit

Oct. 1, 2021–Feb. 15, 2022

Squirrel

May 22, 2021–Feb. 15, 2022

Turkey

Archery:

Sept. 15–Nov. 12, 2021

Nov. 24, 2021–Jan. 15, 2022

Firearms:

- ▶ Youth (ages 6–15): April 10–11, 2021
- ▶ Spring: April 19–May 9, 2021
- ▶ Fall: Oct. 1–31, 2021

Waterfowl

See the *Migratory Bird and Waterfowl Hunting Digest* or visit short.mdc.mo.gov/ZZx for more information.



For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.



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This carpenter bee discovered the sweet nectar of a redbud tree, one of Missouri's showiest native flowering trees. What will you discover when you start buzzing around this spring? Missouri nature is waiting for you!

📷 by **Noppadol Paothong**

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